

REMARKS

Reconsideration of this application is respectfully requested in view of the foregoing amendments and the following remarks. Unless otherwise indicated, all references below to Applicants' specification refer to Appendix A filed on February 8, 2006.

Claims 1, 2, 4, 5, 7-9, 12, 14, 15, 28, 30-36, 43, 48 and 50-59 are pending in the application; claims 8 and 58 are withdrawn from consideration; claims 1, 2, 4, 5, 7, 9, 12, 14, 15, 28, 30-36, 43, 48, 50-57 are rejected; and claims 4, 5, 7, 8, 28, 50, 51, 43, 54 and 59 are objected to. Claims 50, 51, 55, 56, and 59 are cancelled. Claims 1, 4, 5, 7-9, 12, 15, 28, 43, 48, 52-54, and 57-58 are amended. Specifically:

Claims 4, 5, 7, 8, and 53 are amended to remove the phrase "carbohydrate binding domain". This amendment is supported at least by claim 2.

Claims 28, 53, and 54 are amended to remove the repetition of GH74\_Ace. This amendment is supported at least by claim 2.

Claims 1, 12, 28, 52, 53, 57, and 58 are amended to indicate that the polypeptide was expressed in a heterologous cell. This amendment is supported by Applicant's specification at, for example, page 12, first paragraph and page 16, second paragraph.

Claim 28 is also amended to indicate that the polypeptide has a GH74\_Ace catalytic domain. This amendment is supported at least by Example 2 and Table 3 on pages 36 and 37, respectively, of Applicants' specification.

Claims 43, 48, and 53 are amended to make the claims more clear. These amendments are grammatical changes and supported by the original claims.

Claims 1, 12, 28, 52, 53, 54, and 57-58 are amended to indicate that the polypeptide has a sequence of SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 4, or SEQ ID NO: 5. This amendment is supported at least by page 5, first paragraph, page 19, last paragraph, and the paragraph at the bottom of page 23.

In the specification, tables 2 and 5 are amended to correctly identify sequences shown in the Tables. Table 2, row 2 is also amended to properly refer to Tables 3 and 4. These amendments do not introduce new matter and merely correct typographical errors.

Applicant believes that no new material has been added.

**I. Objection to the Specification and Amendments to the Sequence Listing**

The Examiner requests that the sequences shown in the Tables be given SEQ ID NOs. Tables 2 and 5 are amended to include the sequence identifiers. SEQ ID NO: 8 represents the amino acid sequence in row 3 of Table 2, and is added to the Sequence Listing. Submitted concurrently with this amendment is an electronic copy of the Sequence Listing for the above-identified application submitted under 37 C.F.R. § 1.821(e) and a Statement to Support Filing and Submission. Applicants respectfully request that the electronic copy of the Sequence Listing be entered into the application. The electronic copy contains no new matter (37 C.F.R. § 1.821 (g)). Support for the electronic sequence listing is found in the sequence listing of record filed on January 8, 2002 and in the originally filed specification.

Applicants do not believe a paper copy is required at this time. If the Examiner further requires a paper copy, please inform the undersigned.

**II. Objection to the Claims**

The Examiner objects to claims 4, 5, 7, 8, and 53 for repeating the definition of carbohydrate binding domain III. These claims are amended to address the Examiner's concern.

The Examiner objects to claims 28, 50, 53, 54, and 59 for repeating the definition of glycosyl hydrolase family 74. Claims 50 and 59 are cancelled. The remaining claims are amended to address the Examiner's objection.

The Examiner objects to claim 50 for disclosing sequences not identified by a SEQ ID NO, and claim 51 as dependent upon claim 50. Claims 50 and 51 are cancelled, thus mooting the Examiner's objection to those claims.

**III. Rejection of Claims under 35 U.S.C. § 112, Second Paragraph**

The Examiner rejects claims 1, 2, 4, 5, 7, 9, 12, 14, 15, 28, 30-36, 43, 48, 50-57, and 59 as indefinite for failure to particularly point out and distinctly claim the subject matter Applicants regard as their invention.

The Examiner rejects claims 1, 28, 50, 52, 53, 55-57, and 58 (and claims dependent thereon) as unclear as to whether the composition comprises the protein "within the heterologous cell" or "free of the heterologous cell." Claims 50, 55, and 56 are cancelled, thus mooting the objection as to those claims. The remaining claims are amended to indicate that the protein was expressed in a heterologous cell.

The Examiner rejects claim 12 as unclear as to whether the claim is directed to the protein “within the heterologous cell” or “free of the heterologous cell.” The claim is amended to indicate that the protein was expressed in a heterologous cell.

The Examiner rejects claims 28 (and claims dependent thereon) and 50 as indefinite as the specification allegedly fails to define the enzyme activity of GH74\_Ace. Claim 50 is cancelled, thus mooting the rejection as to that claim. Claim 28 is amended to reflect that the polypeptide has a GH74\_Ace catalytic domain as shown at, for example, Example 2 and Table 3 on pages 36 and 37, respectively, of Applicants’ specification.

The Examiner rejects claim 59 as indefinite. This claim is cancelled thus mooting the rejection.

The Examiner rejects claim 43 as indefinite by the use of the phrase “A composition...” This claim is amended to depend from claim 28, thus making the claim more clear.

The Examiner rejects claims 48 and 51 as indefinite for the use of the word “retains”. Claim 51 is cancelled, thus mooting the rejection as to that claim. Claim 48 is amended to delete the word “retains”.

The Examiner rejects claim 51 as dependent from a cancelled claim. This claim is cancelled thereby mooting the rejection.

The Examiner rejects claim 53 for the use of the phrase “characterized by”. This claim is amended to indicate that the polypeptide has a GH74\_Ace catalytic domain and a carbohydrate binding domain.

The Examiner rejects claim 59 as indefinite. The claim is cancelled thus mooting the rejection.

#### **IV. Rejection of Claims under 35 U.S.C. § 112, First Paragraph**

##### **A. Enablement Rejection**

The Examiner rejects claims 1, 2, 4, 5, 7-9, 12, 14, 15, 28, 30-36, 43, 48, 50-57, and 59 under 35 U.S.C. 112, first paragraph as the specification allegedly fails to enable one skilled in the art to make and use the invention commensurate in scope with the claims. Applicants believe that the claims as amended address the Examiner’s concerns.

B. Written Description Rejection

The Examiner rejects claims 50 and 51 as the language "having a sequence identical to SEQ ID NO: 3 in each position marked with an asterisk\*" is allegedly not supported by Applicants' description. These claims are cancelled, thus mooting the rejection.

The Examiner rejects claims 1, 2, 4, 5, 7-9, 12, 14, 15, 28, 30-36, 43, 48, 50, 51, 57, and 59 as allegedly containing subject matter not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors had possession of the invention at the time the application was filed. Claims 50, 51, and 59 are cancelled, thus mooting the rejection as to those claims. Applicants believe that the amendments to the remaining claims address the Examiner's concerns.

V. Rejection of Claim 52 under 35 U.S.C. § 102(b)

The Examiner rejects claim 52 as anticipated by Seeger et al., 1999. Applicants believe that the amendments to claim 52 address the Examiner's concerns.

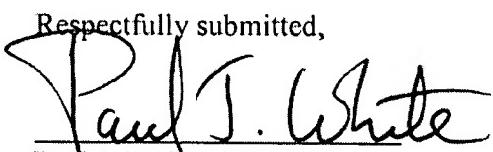
\*\*\*\*\*

For the reasons set forth above, Applicants respectfully submit the claims are allowable and reconsideration and issuance of a notice of allowance are respectfully requested. If it would be helpful to obtain favorable consideration of this case, the Examiner is encouraged to call and discuss this case with the undersigned.

This constitutes a request for any needed extension of time and an authorization to charge all fees therefore to deposit account No. 14-0460 if not otherwise specifically requested. The undersigned hereby authorizes the charge of any required fees not included or any deficiency of fees submitted herewith to be charged to deposit account No. 14-0460.

Date: 8/20/07

Respectfully submitted,



Paul J. White, #30,436  
National Renewable Energy Laboratory  
1617 Cole Blvd.  
Golden, CO 80401  
(303) 384-7575